

1. An apparatus for extruding a first type of liquid material into a first plurality of strands and a second type of liquid material into a second plurality of strands and combining the first and second pluralities of strands into a plurality of multi-component filaments, comprising:

5 a die tip including a first liquid input configured to communicate with a supply of the first type of liquid material and a second liquid input configured to communicate with a supply of the second type of liquid material;

10 a plurality of first liquid outlets each for extruding a corresponding plurality of first strands;

a plurality of second liquid outlets each for extruding a corresponding plurality of second strands, each second outlet positioned adjacent to a corresponding one of said first liquid outlets;

15 a plurality of first liquid passages, each communicating between said first liquid input and a selected one of said first liquid outlets; and

a plurality of second liquid passages, each communicating between said second liquid input and a selected one of said second liquid outlets, said first and second liquid passages respectively converging at said first and second liquid outlets for respectively extruding the pluralities of first and second strands, the first and second strands combining together immediately after extrusion to form the plurality of multi-component filaments having a cross-sectional configuration combining the first and second types of liquid material.

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2. The apparatus of claim 1, further comprising:

a manifold assembly including a first manifold liquid passage communicating between the supply of the first type of liquid material and said first liquid input of said die tip and including a second manifold liquid
5 passage communicating between the supply of the second type of liquid material and said second liquid input of said die tip, said manifold assembly further including a first heating device positioned proximate to said first manifold liquid passage for maintaining the supply of the first liquid material at a first predetermined temperature and including a second heating device
10 positioned proximately to said second manifold liquid passage for maintaining the supply of the second liquid material at a second predetermined temperature.

3. The apparatus of claim 1, wherein said first and second outlets respectively tangentially meet at an external surface of said die tip.

4. The apparatus of claim 1, wherein the die tip further comprises:

a transfer block including said first and second liquid inputs and portions of said first and second liquid passages; and

5 a die tip block including said first and second outlets and other portions of said first and second liquid passages.

5. An apparatus for extruding a first type of liquid material into a first plurality of strands and a second type of liquid material into a second plurality of strands and combining the first and second pluralities of strands into a plurality of multi-component filaments, comprising:

5 a die tip including a first liquid input configured to communicate with a supply of the first type of liquid material and a second liquid input configured to communicate with a supply of the second type of liquid material;

10 a plurality of first liquid outlets each for extruding a corresponding plurality of first strands;

a plurality of second liquid outlets each for extruding a corresponding plurality of second strands, each second outlet positioned adjacent to a corresponding one of said first liquid outlets;

15 a plurality of first liquid passages, each communicating between said first liquid input and a selected one of said first liquid outlets;

a plurality of second liquid passages, each communicating between said second liquid input and a selected one of said second liquid outlets, said first and second liquid passages respectively converging at said first and second liquid outlets for respectively extruding the pluralities of first and second strands, the first and second strands combining together immediately after extrusion to form the plurality of multi-component filaments having a cross-sectional configuration combining the first and second types of liquid material; and

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air passages positioned on opposite sides of said first and second liquid outlets and configured to direct process air to impinge the multi-component filaments.

6. A method of producing multi-component filaments, comprising:
extruding a plurality of first strands of a first type of liquid material;
simultaneously extruding a plurality of second strands of a
5 second type of liquid material; and
combining the plurality of first strands respectively with the plurality of second strands into multi-component filaments immediately after extrusion, each filament having a cross-sectional configuration combining the first and second types of liquid material.

7. The method of claim 6, further comprising:
impinging pressurized air upon the coalescing multi-component filaments for attenuating the multi-component filaments.

8. The method of claim 6, further comprising:
maintaining a supply of the first type of liquid material at a first predetermined temperature prior to extrusion as the plurality of first strands.

9. The method of claim 8, further comprising:
maintaining a supply of the second type of liquid material at a second predetermined temperature prior to extrusion as the plurality of second strands.